DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE:

CSSTP-0008-00(425) Fulton

OFFICE: Engineering Services

STP00-9408-00(003)

P.I. Nos.: 0008425 & 751650

SR 961/Old Alabama Road Widening

February 10, 2010 DATE:

FROM:

Ronald E. Wishon, State Project Review Engineer AEW

TO:

Bobby K. Hilliard, PE, State Program Delivery Engineer

Attn.: Kimberly Nesbitt

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above projects was held December 14-17, 2009. Responses were received on February 9, 2010. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT#	Description	Potential Savings/LCC	Implement	Comments
RD-6	Use asphalt in lieu of concrete for multi-use trail	\$1,220,660	No	Context Sensitive Design has been a major tool in the development of this project since it was previously rejected due to strong public opposition. Public input has been utilized in the development of this project to regain trust and support for the proposed improvements. The visual aesthetics of the project have been a significant issue raised at public meetings. Johns Creek is using 6" concrete on their path system, and this path will become a part of that system.
RD-7	Use modular block walls in lieu of cast- in-place walls	\$341,888	No	Fabric/Geogrid wall reinforcement will conflict with the multiple existing underground utilities. Future utility maintenance may damage wall reinforcing and compromise the integrity of the walls. More excavation is required for the construction of the block walls than for the originally proposed cast-in-place walls. The additional excavation will impact construction and staging, and increase ROW impacts. The Bridge Office indicated that they only allow modular block walls to retain fill slopes up to 20 ft and do not intend to use them to support a roadway section.

CSSTP-0008-00(425) STP000-9408-00(003) Fulton Implementation of Value Engineering Study Alternatives

RD-10	Utilize existing pavement from Sta. 138+40 to Sta. 184+34	Proposed = \$555,042 Actual = \$4,307,675	Yes, with modifications	The soil survey and pavement evaluation were completed after the VE Study was held. Based on the actual soil support value provided in the soil survey and the pavement evaluation, the Design Consultant was able to provide a more acceptable pavement design that can be used throughout the project corridor. The Project Manager indicated that OMR has concurred with this new pavement design. This will provide \$4,307,675 in savings.
RD-14	Provide a median from Autry Mill Road to Spruill Road	Design Suggestion	No	The median was eliminated in this area because there are no driveways and there will be no turning vehicles. There are two stream crossings in this section of the project, as well as a flood plain on the south side of the road. The median was eliminated to minimize impacts to the stream and flood plain.
RD-23	Eliminate 20 ft wide two way left turn lane east of the fire station	Design Suggestion	No	The traffic volumes in this area would typically require a raised median to control access. The entrance to the fire station (Newtown Park) is too close to the intersection at Anaheim Drive to allow for median openings at both locations. If a raised median was added from the fire station to the next signal at Feathersound Ct./Brumbelow Rd., then additional pavement for U-turns would be needed at Newtown Park. This would adversely impact the park property. By using the flush median in this area, NEPA impacts are avoided, and access to both Newtown Park and the fire station is provided.
RD-26	Eliminate two way left turn lanes and add raised medians or left turn lanes	Design Suggestion	No	Where the traffic volumes require a flush median, a flush median has been shown. Raised landscaped medians have been added in areas that do not require accommodating left turn lanes as part of the context sensitive design approach to this roadway.
RD-30	Delete new entrance south of Belcourt Parkway into commercial area	\$180,001	Yes	This will be done.

BR-1	Construct separate bike/pedestrian bridge to the south of Bridge No. 2 and provide 2 foot shoulder on new bridge	\$149,063	No	The VE Team indicated that existing abandoned abutments could be used for the new bike/pedestrian bridge. These abutments will not meet the hydraulic requirements of the site. The use of a pre-fabricated structure as proposed by the VE Team would require that the bridge be bolted together on site and lifted into place. There is an existing overhead transmission line that would greatly complicate the placement of the bridge. If a separate structure was used for cyclists and pedestrians, the multi-use path ramps would be required to cross from the north path under both ends of the bridges and loop back to tie into the south sidewalk. The west ramp would conflict with the adjacent power station. The east ramp would conflict with the adjacent commercial driveway. Maintaining the multi-use path in a continuous route along the north side of the road and bridge would provide preferred continuity for cyclists and pedestrians. The VE Team used a pedestrian bridge cost of \$54 per SF. Experience with similar bridges recently let by the PATH foundation indicates that \$80 per SF is more realistic. This would reduce the savings to \$108,763 before accounting for the additional ramp costs discussed above.
	Reduce length of			The existing bridge is 120 ft long and requires channel protection. The hydraulic study indicates that a 130 ft bridge is required to meet velocity, backwater and freeboard requirements and to ensure that the required FEMA No-Rise Certification can be obtained. Since the bridge
BR-5	Bridge No. 2 to 110 ft and use a single span	\$295,547	No	cannot be shortened, a single span structure would require the use of 63" Bulb-Tee beams. Use of these beams would require raising the profile 15 ft which would greatly increase roadway costs and impacts. The placement of 130 ft 63" Bulb-Tee beams would be difficult due to the existing transmission lines and the load rating of the existing bridge.

CSSTP-0008-00(425) STP000-9408-00(003) Fulton Implementation of Value Engineering Study Alternatives

BR-6	Use a single span structure at Bridge No. 1 by using 54" Bulb-Tee beams	\$159,240	No	The use of 54" Bulb-Tee beams will require raising the profile 6 ft to meet GDOT hydraulic requirements. The roadway profile at the bridge is in long and shallow sag curve, thus a significant length of profile would be affected. This would increase roadway construction costs. Raising the profile would increase impacts to the 4(f) resource (Autry Mill Nature Preserve). The VE Team indicated that a majority of the savings (\$150,000) are due to reduced construction time. This was based on a reduction in schedule of 10 days at \$15,000 per day. While both of these assumptions are difficult to confirm or refute, implementation of BR-6 will not significantly reduce the time associated with constructing the superstructure. Bridge construction is not on the critical path and it does not control the schedule of the project.
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The Office of Engineering Services concurs with the Project Manager's responses.

Approved:	
- PP	

Gerald M. Ross, PE, Chief Engineer

Date: 2/17/10

REW/LLM

Attachments

c:

Ben Buchan

Bobby Hilliard/Michael Haithcock/Kimberly Nesbitt Paul Liles/Bill Duvall/Bill Ingalsbe/Lyn Clements

Keisha Jackson

Mickey McGee

Ken Werho

Lisa Myers

Matt Sanders

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA



INTERDEPARTMENT CORRESPONDENCE

FILE

STP00-9408-00(003) PI 751650 &

CSSTP-0008-00(425) PI 0008425

SR 961/Old Alabama Road from Holcomb Bridge Rd

to Buice Rd, Fulton County

OFFICE

Engineering Services

Atlanta, Georgia

DATE

February 8, 2010

FROM

Bobby Hilliard, P.E., Office of Program Delivery Engineer

B.74.

TO

Ronald E. Wishon., State Project Review Engineer

Attention: Lisa Myers, VE Study Coordinator

SUBJECT RESPONSES TO THE VALUE ENGINEERING STUDY REPORT

Attached are responses to the VE Recommendation Report for STP00-9408-00(003) & CSSTP-0008-00(425) in Fulton County dated January 4, 2010. The responses were reviewed and approved by the Office of Program Delivery Office Head-Bobby Hilliard and the Project Manager-Kimberly Nesbitt. The calculations and proposed partial implementation was done and reviewed by the consultant as stated in the QA/QC certification. Based on calculations the agreed upon recommendations account for a savings of \$4,307,674.55.

If you have any questions or concerns please contact the Project Manger Kimberly Nesbitt at 404-631-1575.

BKH:MAH:KWN

Attachments



February 8, 2010

Bobby Hilliard State Program Delivery Engineer Georgia Department of Transportation 600 West Peachtree Street Atlanta, Georgia 30308

Attn: Kim Nesbitt, Project Manager

RESPONSES TO THE VALUE ENGINEERING STUDY REPORT Re: Projects STP00-9408-00(003) & CSSTP-0008-00(425) PPs 751650 & 0008425

SR 961/Old Alabama Rd from Holcomb Bridge Rd to Buice Rd, Fulton Co.

Please find our responses to the Value Engineering Study report dated January 4, 2010 for the above referenced projects.

RD-6 – Use asphalt in-lieu of concrete for the multi-use trail.

Response: No.

We will not implement this recommendation. Context Sensitive Design has been a major tool in the development of this project that was previously rejected due to strong public outcry of opposition. Utilizing public input in the development of this project has been very successful in regaining public trust and support for the proposed improvements. The visual aesthetics of this project have been a significant issue raised at the public meetings. We forwarded the suggestion to the cities for their response to this recommendation. Johns Creek and Roswell both responded with a preference of concrete to asphalt. Johns Creek is using 6" of concrete with no sub base on their path system, of which this multi-purpose path will be a part of, elsewhere in the city.

The VE Study recommends only 1-1/2" of asphalt. This is not structurally adequate enough. It would need at least 4" of GAB and preferably 6" to provide adequate structure. This is a major utility corridor and as such will likely have large utility vehicles pulling off the road onto this path for occasional maintenance issues. The 1-1/2" asphalt will not support these vehicles and would likely require repairs after each occurrence. When comparing costs of an asphalt option (1-1/2" of asphalt and 6" GAB) to the concrete option (6" concrete), the revised cost savings would be approximately \$417,923. (see attached marked up worksheets for RD-6)

RD-7 - Use modular block walls in-lieu of cast in place walls.

Response: No.

We do not recommend the use of modular block walls when the wall is used to retaining the roadway for the following reasons:

1. Fabric/geogrid wall reinforcement will conflict with multiple existing underground utilities. Future utility maintenance may damage wall reinforcing and compromise the integrity of the walls.

2. Greater excavation is required for the construction of modular block walls with fabric/geogrid reinforcement than is required for the construction of cast-in-place walls. The additional excavation for the wall reinforcement will impact construction and traffic staging for walls holding up the roadway and will increase ROW impacts for wall holding other parcels off the roadway.



The Bridge Office has concurred that they only use modular block walls to retain fill slopes up to 20 feet in height and does not intend to use them to support a roadway section.

According the VE Study Cost Estimate, the modular block walls would cost \$621,648 and would save \$341,888. We do not believe this cost estimate adequately accounts for the cost of footing construction, backfill material and cast-in-place coping. In fact, the VE study states that the coping costs of each wall type will be offset. This is not true. The parapet for the cast-in-place wall is simply an extension of the wall. It is not cast separately, and it transmits live load directly through the wall. The modular block wall requires a cast-in-place coping that includes a parapet with moment slab to prevent live loads from being transmitted to the wall, similar to the Type A or B coping used for MSE walls. In addition, GDOT recently let a project that offered a modular block alternate and a cast-in-place wall alternate. The cast in-place wall was the chosen alternate by the contractor and it came in at \$46/SF. They did not provide a cost for the modular block wall but it can be assumed that it was more than \$46/SF. (see attached emails from the GDOT-Bridge Dept.) We therefore do not believe that there would be cost savings realized utilizing the modular block type wall.

RD-10 - Utilize existing pavement from Sta 138+40 to 184+34.

Response: Partial YES

The existing pavement structure lacks any kind of consistency based on the pavement cores taken along the corridor. Here are four examples that fall within or near the station range in question:

- Core #10 Westbound left lane at Sta 204+50: 4 " asphalt, 5" gravel base
- Core #11 Westbound right lane at Station 179+50: 7" asphalt, 6" gravel base
- Core #13 Eastbound right lane at Station 135+00: 10" asphalt, 5" gravel base
- Core #14 Eastbound left lane at Sta 164+50: 9-3/4" asphalt, silty sand base

As you can see there is no real consistency to the existing pavement. There may be sections between these core locations with an even weaker pavement structure.

The existing pavement structure does not meet the structural requirement for the projected traffic volumes in the design year. This section anticipates growth to produce an ADT of 20,040 in 2012 and 24,740 in the design year 2032 with 24 hr trucks of 5%. Utilizing the revised Soil Support Value of 3.0 from the Soil Survey and designing an overlay design applied at the four core locations revealed that the overlay design ranged from a simple 1-1/2" overlay to the need to have 7-1/2" of asphalt overlay.

Due to the fact that this is a major widening project and not just a minor spot repair project, it would be in the best interest of the design to correct all substandard design issues including the existing pavement structure to an acceptable structural thickness. It is our recommendation that we provide a pavement structure that can handle the proposed design volumes for the design year of 2032 and not risk having sections of pavement fail with the increased loads.

Based on the Pavement Design Calculations, this segment of roadway would need the following to provide a design that is acceptable in the design year:

- · 8-1/2" of asphalt
- 11" of Graded Aggregate Base



This is a reduction of 4" of asphalt and 2" of GAB from the original design. This reduction is due to the reduced traffic volumes in this stretch of roadway and the incorporation of the actual Soil Support Value from the Soil Survey Report. The default Soil Support Value for the original design was 2.5 and the actual Soil Support Value is 3.0. This change significantly affected the payement design thickness required.

It was determined that this same pavement design can be used throughout most of the project corridor. There is one stretch of roadway, from Nesbit Ferry Rd to Jones Bridge Rd, where the traffic increases enough to require 12" of Graded Aggregate Base rather than the 11".

The cost savings due to the reduced pavement thickness throughout the corridor from the original pavement design as presented to the VE Study Team would be \$4,307,675. (see attached cost worksheet for cost savings breakdown)

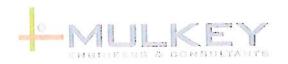
RD-14 – Provide a median from Autry Mill Road to Spruill Road – Design Suggestion Response: No.

The decision was made to eliminate the median in this stretch of roadway for the following reasons:

- There are no driveways currently in this stretch of roadway that would necessitate a need to provide a left turn lane.
- 2. There are two stream crossings (Sta 394+40 & Sta 398+15) as well as a flood plain located on the south side of the road. We eliminated the raised median so that we could minimize our stream and flood plain impacts. Throughout the design of this corridor we made every attempt to avoid or minimize impacts to environmentally sensitive areas. The elimination of the median in this stretch was in keeping with this environmental approach.

RD-23 – Eliminate 20' two way turn lanes at the fire station – Design Suggestion Response: No.

We understand this recommendation is meant to apply to Sta 265+60 to 269+25 (Newtown Park/fire station to Anaheim Dr.). This segment of roadway has a volume of traffic that would typically require a raised median in order to control access, minimize left turns and improve capacity and safety. A median break is required at the existing signal at the intersection with the Newtown Park entrance/fire station driveway. If a median break were provided for Anaheim drive, this would be only 360 ft from the median break at the fire station which is less than the 1000 ft desired and less than the 660 ft minimum spacing for median breaks. If a raised median were provided from the fire station to the next signal at Feathersound Ct/Brumbelow Rd then a U-turn bump out would be required at the Newtown Park entrance for vehicles from Anaheim Drive that want to head eastbound on Old Alabama Rd. A U-turn bump out would also be required at Feathersound Ct for EB traffic to get to Anaheim Drive. The Uturn bump out at Newtown Park would require an additional 12 ft of pavement which would impact the Newtown Park parcel. This is a park property and NEPA requires us to avoid impacts to park properties if possible. In addition, the bump out would at Feathersound Ct would require an impact to the residential property in the NW corner of this intersection. This property owner has been very vocal at several of the public meetings about not impacting his property. By providing a flush median for the stretch between the fire station and Anaheim Dr, the access to Anaheim Dr. is preserved and the need for U-turn bump outs is eliminated at the park property and the concerned citizen. Therefore we recommend continuing with a flush median for this stretch of roadway.



RD-26 - Eliminate two-way left turns - Design Suggestion

Response: No.

It is not clear in the VE Study where specifically they suggest eliminating the flush median (two-way left turns). Through Roswell as well as east of Jones Bridge Rd where a 5-lane or 3-lane section is utilized, a flush median was provided in order to accommodate left turn vehicles into either a side street or a driveway. If left turns were not required, then a raised landscaped median was provided as part of the aesthetic treatment of the roadway.

Most of these sections have traffic volumes that would require a flush median. We provided raised landscaped medians in areas that did not require accommodating left turns as part of our context sensitive design approach to this roadway as requested by the public at the various public meetings. It was clear that the public wanted to try and maintain the park like feel of the roadway and not have a heavy hardscape design. We provided landscaped medians wherever traffic operations would allow. We will therefore keep the location of the flush and raised medians as shown.

RD-30 Delete new entrance south of Belcourt Parkway into commercial area Response: Yes.

BR-1 Construct separate bike/pedestrian bridge to the south of bridge #2 and provide 2'-0" shoulder on new bridge.

Response: No. (Please refer to the attached email of concurrence from the GDOT- Bridge Department)

We do not agree with this recommendation for the following reasons:

 The existing abutments proposed to be used by the pedestrian bridge are spaced approximately 115'. Using the existing abutments with proper endrolls will not meet the hydraulic requirements of the site.

We do not have adequate design, as-built and current condition information for the existing abutments to propose using them for the pedestrian bridge.

 A pre-manufactured pedestrian bridge must be bolted together and then lifted into place. The east end of the pedestrian bridge would fall directly under the overhead transmission lines, greatly complicating its placement.

4. The path ramps would have to cross from the north path under both ends of both bridges and loop back to tie in to the south sidewalk. The west ramp would conflict with the adjacent power substation. The east ramp may conflict with the adjacent commercial driveway. In addition, this bridge is located in the sag of a long hill on both sides. Bicyclists using the path would have to break at the bottom of the hill to pass under the roadway bridge, cross the pedestrian bridge and then pass under the roadway bridge again to continue on the path along Old Alabama Rd. This is a significant break in continuity and flow that would be frustrating for many users. Maintaining the path in a continuous route along the north side of the road and roadway bridge would provide preferred continuity for bicyclists as well as pedestrians.

5. According the VE Study Cost Estimate, the pedestrian bridge would cost \$54 per SF, inclusive of the substructure and would save \$149,063. We do not believe this cost estimate adequately accounts for the cost of abutment construction, shipping, placement and deck construction. Our experience with similar pedestrian bridges recently let by the PATH foundation indicates that \$80 per SF is a more realistic cost



estimate, reducing the savings to \$108,763 before accounting for the additional ramp costs discussed above.

BR-5 Reduce the length of bridge #2 to 110' and use a single span.

Response: No. (Please refer to the attached email of concurrence from the GDOT- Bridge Department)

We do not agree with this recommendation for the following reasons:

The existing bridge is 120' long and currently requires channel protection. The
hydraulic study indicates that a 130' long bridge is required to meet the velocity,
backwater and freeboard requirements of the GDOT Drainage Manual and to ensure
that the required FEMA No-Rise Certification can be obtained.

2. Since the bridge cannot be shortened, a single span structure would require the use of 63" Bulb-Tee beams. The use of these beams would require raising the profile

approximately 15". This would increase roadway costs and impacts.

3. Placement of 130' 63" Bulb-Tee beams would be difficult due to site constraints. The overhead transmission lines would prohibit the use of two cranes to place the beams from one end of the bridge. The load rating of the existing bridge would prohibit trucking one end of each approximately 100 kip beam across the creek.

BR-6 Use a single span structure at Bridge #1

Response: No. (Please refer to the attached email of concurrence from the GDOT- Bridge Department)

We do not agree with this recommendation for the following reasons:

 The use of 54" Bulb Tee beams will require raising the profile approximately 6" to meet GDOT hydraulic requirements. The roadway profile at the bridge is in a long and shallow sag curve, thus a significant length of profile would be affected. This would

increase roadway construction costs.

2. Raising of the profile as discussed in No. 1 above would increase impacts to the 4(f) resource (Autry Mill Nature Preserve) immediately north of the bridge and the Country Club of the South immediately south of the bridge. A DeMinimis has been negotiated with the Nature Preserve based on the impacts for the current bridge design. Additional impacts would require a renegotiation of the DeMinimis, possibly delaying the project schedule and possibly upsetting the owner into no longer agreeing to the DeMinimis impact.

The use of a single span structure will require larger cranes and a larger pile hammer than that required to construct Bridge 2. Using similar structures at both locations will

reduce the contractor's equipment costs.

4. According to the VE Study Cost Estimate, Alternative BR-6 will save \$9,240 in material costs and \$150,000 due to reduced construction time. The construction time savings were estimated by assuming that Alternative BR-6 will reduce the construction schedule by 10 days and that each day costs \$15,000. Both of these assumptions are difficult to confirm or refute. Alternative BR-6 will not significantly reduce the time associated with constructing the superstructure. It will eliminate the time associated with constructing the two intermediate pile bents. However, bridge construction is not on the project critical path, i.e. it does not control the schedule. The time savings and associated cost provided are subjective at best.



Please find these responses and	backup documentation as submitted for your review and approv
Please find these responses and	backup documentation as submitted for your review and appro-

Sincerely,

Scott A. Gero, P.E. Project Manager

Attachments

Cc: Kim Nesbitt, GDOT Project Manager

Project File: 2006336.15

Quality Control Certification:

The responses have been prepared by:

Scott A. Gero, PE, Project Manager for Mulkey Engineers and Consultants

The responses have been reviewed for Quality Assurance by:

Neil R. Davis, P.E., Project Principal for Mulkey Engineers and Consultants

Value Analysis Design Alternative



PROJECT:

Georgia Department of Transportation

STP00-9408-00(003) - P.I. No. 751650 and CSSTP-0008-00(425) - P.I. No. 0008425

Widening and Improvements SR961/Old Alabama Road from Holcomb Bridge Road to Buice Road

Fulton County

DESCRIPTION: Use asphalt in fleu of concrete for multi-use trail

ALTERNATIVE NO .:

RD-6

SHEET NO .: 1 of 5

Orlginal Design:

The original design constructs the 10' multi-use trail with concrete at 4" thickness. Helds to be 6" of concrete.

Alternative Design:

The alternative design would construct the multi-use trail using asphalt, at a 1.5" nominal thickness throughout the project.

Need to also include 6" of GAB

Opportunities:

- Reduction in present costs
- Réduction in life cycle costs
- Requires less time to construct

Risks:

None apparent

Technical Discussion:

The alternative suggests using asphalt to construct the proposed 10' multi-use trail throughout the project. A savings in present costs will be realized by utilizing asphalt, which is much less expensive than concrete on a first cost basis. A life cycle cost analysis is attached which supports the use of asphalt over concrete for the useful life of the proposed multi-use trail. In addition to present and life cycle cost savings, using asphalt would require less time to construct than a similar path constructed of concrete.

COST SUMMARY		INITIAL COST		NT WORTH RING COSTS	PRESENT WORTH LIFE-CYCLE COST		
ORIGINAL DESIGN CONCRE (6")	S	-3,467,640-	s	0	\$	3,467,640	
ALTERNATIVE (ASDKALL + GAB)	S	2,246,979	S	0	S	2,246,979	
SAVINGS	S	1,220,660	S	0	S	1,220,660	

Calculations

PBS

PROJECT:

Georgia Department of Transportation

STP00-9408-00(003) - P.I. No. 751650 and

CSSTP-0008-00(425) - P.I. No. 0009425 Widening and Improvements SR961/Old Alabama Road

from Holcomb Bridge Road to Buice Road

Fulton County

Pulton County

Use asphalt in lieu of concrete for multi-use trail

ALTERNATIVE NO .:

RD-6

SHEET NO.: 3 of 5

Assumptions:

DESCRIPTION:

Replace 10° concrete proposed multi-use trail with asphalt. STA 100+00-STA 492+74= 39,274LF 39,274LF x 10/9=43,638 SY total area of multi-use trail

Reduce pay item for 4" concrete sidewalk by 43,638 SY

Increase pay item for 12.5mm Superpave:

43,638 SY x 165LB/SY(2000LB/TN)=3,600 TN required to construct

Cost per SY using asphalt:

3600 tons x \$64.13/ton=\$230,868/43,638 SY=\$5.29/SY asphalt costs

6" (uncrete Option: (43,638 sy) (\$ 23.06/54) = \$1,006, 292 (cost from Hem Mean Summon, 12/09)

Asphalt Option: 11/2" Asphalt = (3600 TN) (\$64.13 1TN) = \$ 230, 868

6" GAB = (43,638 SY) (19.54(5Y) = \$ 416,307

Total = \$ 647,175 = \$ 14.83 154

Prep. By: Nina Gailey Checked by: Scott Gers

Cost Worksheet PBS

ALTERNATIVE NO .: Georgia Department of Transportation PROJECT: STP00-9408-00(003) - P.I. No. 751650 & RD-6 CSSTP-0008-00(425) - P.I. No. 0008426 Widening and Improvements SR961/Old Alabama Road from Holcomb Bridge Road to **Fulton County** Use asphalt in lieu of concrete for multi-use SHEET NO .: 4 of 5 DESCRIPTION: PROPOSED ESTIMATE ORIGINAL ESTIMATE CONSTRUCTION ITEM NO. OF NO. OF COST/ UNIT TOTAL COST/ UNIT TOTAL UNITS **ITEM** UNITS UNITS 24,398 \$ 64.13 \$ 1,564,644 20,798 \$ 64.13 \$ 1,333,776 TN 12.5 mm Superpave 15,562 \$30.72 478,065 SY 59,200 \$30.72 \$ 1,818,624 Concrete Sidewalk 4" 13638 \$ 23,06 \$1,006,292 54 Concrete Asphalt: 12.5 mm superpave (11/2") TN \$64.13 \$ 230,868 19.54 13638 6416,307 6" GAB 54 Asbhalt: Concrete: 1647,175 11,006, 292 \$ 3,152,400 \$ -2,042,708 Sub-total 1 100,629 \$64,718 \$ 204,271 \$ 345,240 Cons't Mark-up 10.00% 1711,893 \$ -2,246,979 \$1,106,921 \$ -3,467,640 TOTAL

26 of 87

Checked by: Scott Geno

\$1,220,660

\$ 395,028

Prepared by: Nina Gailey

Estimated Savings:

LIFE CYCLE COST WORKSHEET

PHS

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							IN	ITIAL COST	SAVINGS			_	09,714	
	REC	CUR	REN	T COSTS (Ann	ial Expendi	tures)						-	1,117	
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х.			3.	Leveling	20	2.00	43,638	\$ 87,276	0.553	-	48,323	+	•	OKAL
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						Pres	ent Worth of S	INGLE EXP	ENDITURE	SS	113,265	_	283,161	
D,		S	۸Ļ۱	/AGE VALUE	Year	Cost/s	y SY	Amount	PW facto	۲.	Present Worth		Present Worth	
x			1.	Concrete	30	r!	43,638	\$ (43,638) 0A12	20 S	(17,97	-	•	Okay
		X	2.	Asphalt	30	-10	43,638			-		-	(179,783)	-(
				*			100000000000000000000000000000000000000	orth of SALA		_			(179,783	
E.	T			urrent Costs & S									77.000	135,091
		R	ECU	RRENT COSTS	& SINGLE					10			111,975	
						T	OTÁL PRESE				-1,567,27	_	345,535	\$ 782,2
		-	-			-		TO	PÁL LIFE C	YCL	E SAVINO	SSS	1,221,689	

(Note - escalation shown as 0.0% since using constant dollar LCC analysis)

1417,923

GDOT-Bridge Dept. Email Concurrence RD-7 + BR responses

Page 1 of 2

Scott Gero

From:

DuVall, Bill [bduvall@dot.ga.gov]

Sent:

Thursday, January 28, 2010 8:43 AM

To:

Scott Gero

Subject:

RE: PI Nos. 0008425 & 751650, Old Alabama Road, Fulton County -- VE Study

Attachments: image001.jpg

The price was for cast-in-place. Since it was the chosen alternative there was not price for the modular block wall. I don't have any other information. My assumption was that the modular block wall would cost more than the 46 \$/SF.

Bill DuVall Bridge Design (404) 631-1883

From: Scott Gero [mailto:sgero@mulkeyinc.com] Sent: Wednesday, January 27, 2010 1:07 PM

To: DuVall, Bill; Joshua Orton

Cc: Masood Shabazaz

Subject: RE: PI Nos. 0008425 & 751650, Old Alabama Road, Fulton County - VE Study

Bill,

I just reread the response on the walls and want to make sure that I have this right. Are you saying that the Cast-In-Place wall came in at \$46/SF and that was cheaper than the Modular Block wall? If so, was a price given for the Modular Block Type Wall on this particular project? Do you have any historic value you would use for the cost/SF for Modular Block Walls?

Thanks,

Scott A. Gero, P.E.
Project Manager/Project Engineer
STP-9408(3) & CSSTP-0008-00(425), Fulton County
PI Nos. 751650 & 0008425
Old Alabama Road Improvements
Mulkey Engineers & Consultants
1255 Canton Street, Suite G
Roswell, GA 30075
678-795-3608
678-461-3494 Fax

From: DuVall, Bill [mailto:bduvall@dot.ga.gov] Sent: Wednesday, January 27, 2010 7:05 AM

To: Joshua Orton

Cc: Scott Gero; Masood Shabazaz

Subject: RE: PI Nos. 0008425 & 751650, Old Alabama Road, Fulton County - VE Study

Joshua,

BR-6 — We agree with your recommendation. After consulting with Engineering Services we would not use more than \$7,500 per day savings for the time savings. I think you can add other more tangible costs to your estimate in response to the VE study that would support your case.

BR-1 - We agree with your recommendation.

BR -5 - We agree with your recommendation.

Walls – Based on a recent project, let in November, we let a modular block alternate to a cast-in-place wall. The cost for the cast-in-place wall was 46 \$/SF which was the winning alternate. Therefore, a cost of 46 \$/SF would be conservative. We only use the modular block walls to retain fill slopes up to 20 feet in height and did not intend on using it under a roadway section. Therefore the cost I provided does not include coping B.

Bill

Bill DuVall Bridge Design (404) 631-1883

From: Joshua Orton [mailto:jorton@heath-lineback.com]

Sent: Wednesday, January 13, 2010 3:30 PM

To: DuVall, Bill

Cc: Scott Gero; Masood Shabazaz

Sulbject: PI Nos. 0008425 & 751650, Old Alabama Road, Fulton County - VE Study

Mr. Duvall:

We are working as the structures subconsultant for Mulkey Engineers for the project referenced above. We are currently preparing responses for the Value Engineering Study. I have placed the VE Study Report, our draft responses and the preliminary layouts on the GDOT ftp site at http://ftp.dot.state.ga.us/DOTFTP/Anonymous-Public/0008425/H&L%20VE%20Response. Will you please provide your concurrence or differing opinion for recommendations BR-1, BR-5, BR-6 and RD-7? Please let me know if you need any additional information. Please contact me or Masood Shabazaz if you wish to discuss. Thank you.

Best Regards, Josh



Joshua Orton, PE
Heath & Lineback Engineers, Inc.
2390 Canton Road, Building 200
Marietta, GA 30066-5393
Voice: 770.424.1668 Ext. 125
Fax: 770.424.2907
Jorton@heath-lineback.com

www.heath-lineback.com

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RD-10 COST WORKSHEET

Based on Default Soil Support Value from Pvmt Design Program

Holcomb B	lugo rea to be					
Material			Area (SY)	Tons	\$/Ton	Cost \$
12.5 mm	1.5"	165	280665	23155	\$ 64.13	\$ 1,484,921.33
19 mm	3"	330	280665	46310	\$ 67.77	\$ 3,138,410.06
25 mm	8"	880	280665	123493	\$ 59.47	\$ 7,344,104.92
GAB*	14	1417.5	280665	198921	\$ 17.04	\$ 3,389,619.27
* GAB - 135	MOE				Total =	\$ 15,357,055.59
REVISED D	ESIGN 1		oil Support Val	ue from So		\$ 10,307,000.00
REVISED D		esbit Ferry		ue from So		\$ 10,507,000.00
REVISED D	ESIGN 1 E	esbit Ferry		ue from So		Cost \$
REVISED D Holcomb B Jones Brid	ESIGN 1 E ridge Rd to N ge Rd to Buic	esbit Ferry e Rd	Rd and		il Survey	Cost \$ \$ 928,495.78
REVISED D Holcomb B Jones Brid Material	ESIGN 1 E ridge Rd to N ge Rd to Buic Thickness	esbit Ferry e Rd #/SY	Rd and Area (SY)	Tons	il Survey	Cost \$ \$ 928,495.78
REVISED D Holcomb B Jones Brid Material 12.5 mm	ESIGN 1 E ridge Rd to N ge Rd to Buic Thickness 1.5"	esbit Ferry e Rd #/SY 165	Area (SY) 175495	Tons 14478	Survey \$/Ton \$ 64.13	Cost \$ \$ 928,495.78

Based on Soil Support Value from Soil Survey **REVISED DESIGN 2**

Nesbitt Ferry Rd to Jones Bridge Rd

ORIGINAL DESIGN

GAB - 135#/CF

Material	Thickness	#/SY	Area (SY)	Tons	\$/Ton		Cost \$
12.5 mm	1.5"	165	105170	8677	\$ 64.13	\$	556,425.55
19 mm	3"	330	105170	17353	\$ 67.77	\$	1,176,016.20
25 mm	4"	440	105170	23137	\$ 59.47	\$	1,375,981.18
GAB*	12	1215	105170	63891	\$ 17.04	\$	1,088,698.81
GAR - 135	S#/CF				Total =	S	4.197.121.73

Total of Revised Design 1 + Revised Design 2

Material	Tons	Cost \$
12.5 mm	23155	\$ 1,484,921.33
19 mm	46310	\$ 3,138,410.06
25 mm	61746	\$ 3,672,052.46
GAB	161620	\$ 2,753,997.19
	Total =	\$ 11,049,381.04

Total = \$ 6,852,259.31

Cost Savings of Revised Design to Original Design:

ORIGINAL DESIGN \$ 15,357,055.59 **REVISED DESIGN 1&2** \$ 11,049,381.04

SAVINGS = \$ 4,307,674.55

Computations by:

Checked by:

PRECONSTRUCTION STATUS REPORT FOR PI:751650-

PRECONSTRUCTION STATUS REPORT FOR PI:0008425

PROJ ID : 0008425 COUNTY : Fulton LENGTH (MI) : 3.40 PROJ MGR : CSSTP-0008-00(425) PROJ MGR : Nesbitt, Kimberly AOHD Initials	0(425)	OLD ALABAMA RD FM CR 65/JONES MPO: Add	D FM CR 65/JON MPO: TIP #:	NES BRIDG	E KD TO	CR II	BRIDGE RD TO CR 111/BUICE RD PRIORITY CODE:		2 2 0	MGMT LET DATE: MGMT ROW DATE: BASELINE LET DATE:	نن	
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•	_	Management Concept Approval Complete		4/24/2009	5/4/2009	8 5	CST LR	LR 12	12,037,346.52	L240 PRECST		
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